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Natural Resources Conservation Service

Montana Basin Outlook Report January 1, 2002

Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

For more water supply and resource management information, contact:
See Attached List

How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Natural Resources Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

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United States Department of Agriculture
Natural Resources Conservation Service
Bozeman, Montana

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Where to Get More Information

This contact list provides you with the names and phone numbers of individuals who can provide more detailed snow survey information for each county.

Beaverhead County
Victor Hager
683-4963

Big Horn County
Ken Scalzone
665-3442

Blaine County
Matthew Crampton
357-2320

Broadwater County
Kelly Morris
266-3146

Carbon County
Gregory Evertz
962-3641

Carter County
Wayne Yost
775-6355

Cascade County
Marty Metz
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Chouteau County
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Custer County
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Daniels County
Stanley French
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Fergus County
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Gallatin County
Gordon Hill
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Garfield County
Clarence Clayton
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Glacier County
Mark Johnson
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Golden Valley County
John Rouane Jr.
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Granite County
Annette Johnson
859-3291

Hill County
Deana Grabofsky
265-6792

Jefferson County
Julie Sacks
287-3215

Judith Basin County
Rick Caquelin
566-2311

Lake County
David Wolf
676-2841

Lewis and Clark County
Lex Riggle
449-5278

Liberty County
Dawn Wickum
759-5778

Lincoln County
Kirk Sullivan
296-2233

Madison County
Ole Berkram
842-5741

McCone County
Regan Fanning
485-2744

Meagher County
Otto Ohlson
547-3633

(over)

Mineral County
Mike Odegard
829-3395

Missoula County
Mike Odegard
829-3395

Musselshell County
John Rouane Jr.
323-2103

Park County
Ron Hoagland
222-2899

Petroleum County
Nikki Lott
429-6646

Phillips County
Lorna Philp
654-1334

Pondera County
Anthony Prince
278-3922

Powder River County
Carol Hilliard
436-2417

Powell County
Glen Green
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Prairie County
Bob Prongua
635-5381

Ravalli County
Lane Johnson
363-5010

Richland County
Jamie Selting
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Roosevelt County
Robert Bray
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Rosebud County
Rocky Schwagler
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Sanders County
Don Feist
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Sheridan County
Monica Friedrich
765-1801

Silver Bow County
Julie Sacks
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Stillwater County
Philip Sandoval
322-5359

Sweet Grass County
Chuck Roloff
932-5160

Teton County
Stacy Denny-Eneboe
466-5722

Toole County
Misty Vermulm
434-5234

Treasure County
Stewart Greer
342-5510

Valley County
Denise Wiedenheft
228-4321

Wheatland County
John Oiestad
632-5534

Wibaux County
Katrina Johnson
796-2211

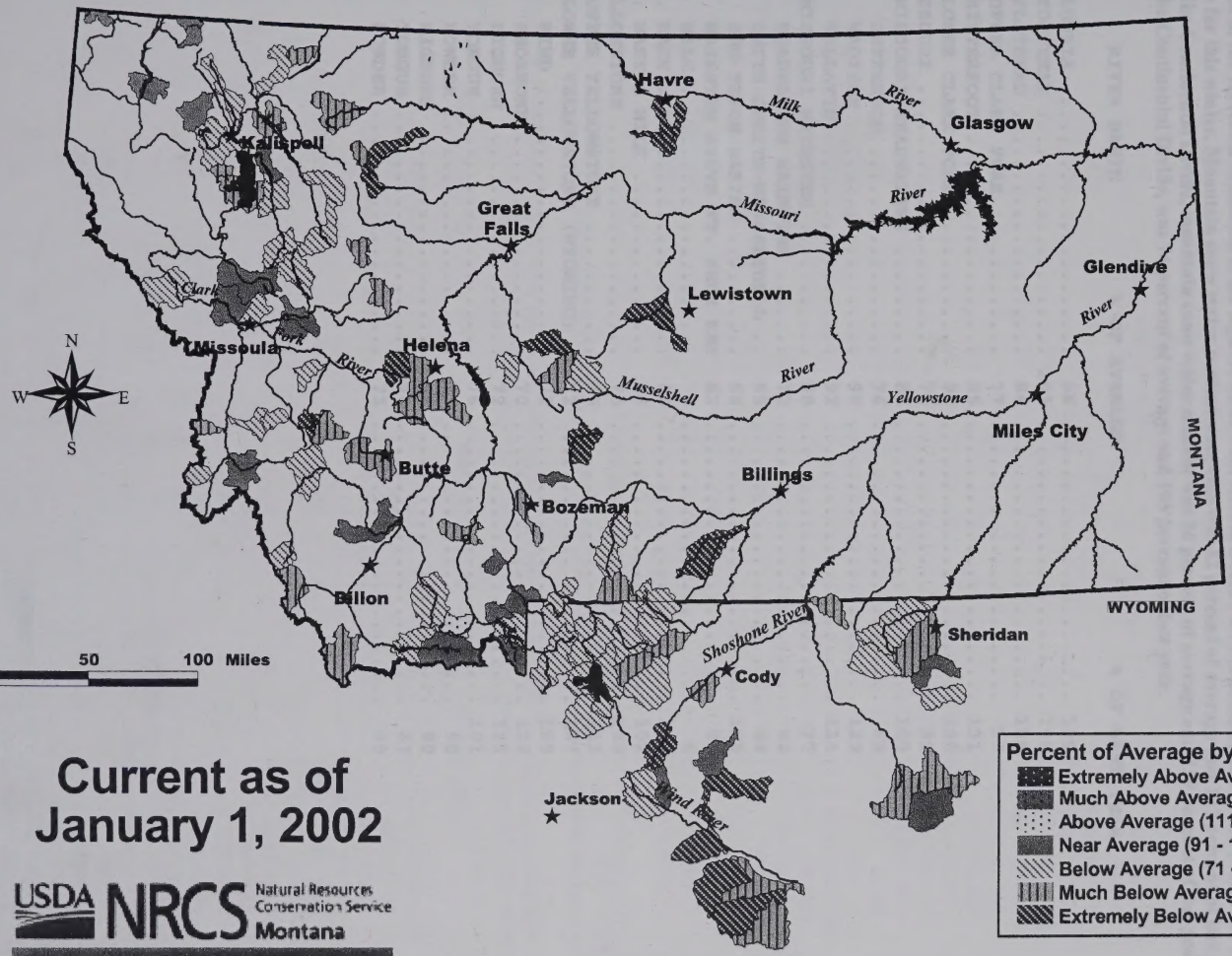
Yellowstone County
Shad Weber
657-6135

1/9/02

UNITED STATES DEPARTMENT OF AGRICULTURE

NATURAL RESOURCES CONSERVATION SERVICE

Mountain Snow Water Equivalent



Current as of January 1, 2002

USDA NRCS Natural Resources Conservation Service Montana

http://www.mt.nrcs.usda.gov

Percent of Average by Sub-Basin

- Extremely Above Average (Over 150)
- Much Above Average (131 - 150)
- Above Average (111 - 130)
- Near Average (91 - 110)
- Below Average (71 - 90)
- Much Below Average (51 - 70)
- Extremely Below Average (Below 51)

NOTE: Data used to generate this map are PROVISIONAL and SUBJECT TO CHANGE.

Mountain Snow Water Equivalent
Current as of

Montana Water Supply Outlook Report as of January 1, 2002

The snowfall season has gotten off to a slow start for most of Montana, with areas of northwest and southwest Montana being the exceptions. This year the mountain snowpack is generally a reversal of what we saw last year. Unlike last year low and mid elevation mountain snowpack is generally below to well below average while the high elevation mountain snowpack is near to above average.

Snowpack

Mountain snowpacks are quite variable across the state for this time of year and overall above those of last year. Snowpack in the Kootenai Mainstem is the highest while Flint Creek, Bears Paw Mountains, and Teton basins are the lowest so far this winter. Mountain snow water content statewide was 82 percent of average and 123 percent of last year. West of the Continental Divide, mountain snow water content was 86 percent of average and 139 percent of last year and East of the Continental Divide, was 74 percent of average and 105 percent of last year.

RIVER BASIN	% OF AVERAGE	% OF LAST YEAR
COLUMBIA	86	139
KOOTENAI	103	198
FLATHEAD	84	158
UPPER CLARK FORK	77	97
BITTERROOT	85	131
LOWER CLARK FORK	99	158
MISSOURI	75	99
MISSOURI HEADWATERS	84	105
JEFFERSON	76	88
MADISON	95	129
GALLATIN	92	114
MISSOURI MAINSTEM	58	77
HEADWATERS MAINSTEM	72	82
SMITH-JUDITH-MUSSELSHELL	65	88
SUN-TETON-MARIAS	59	109
MAINSTEM ABOVE FT. PECK RES	62	88
MILK	6	6
ST. MARY	82	162
ST. MARY & MILK	66	102
YELLOWSTONE	73	109
UPPER YELLOWSTONE	75	113
LOWER YELLOWSTONE (WYOMING)	72	107
WIND	72	109
SHOSHONE	70	122
BIGHORN	72	113
TONGUE	76	101
POWDER	73	95
BIGHORN	65	90
TONGUE	74	87
POWDER	73	89

Precipitation

December mountain and valley precipitation across the state was 75 percent of average and 115 percent of last year, while the water year precipitation was 88 percent of average and 112 percent of last year.

West of the Continental Divide, December mountain and valley precipitation was 84 percent of average and 136 percent of last year and the water year precipitation was 100 percent of average and 154 percent of last year. East of the Divide, December mountain and valley precipitation was 66 percent of average and 97 percent of last year and the water year precipitation was 77 percent of average and 87 percent of last year.

RIVER BASIN	DECEMBER % OF AVERAGE	WATER YEAR % OF AVERAGE
COLUMBIA	84	100
KOOTENAI	102	109
FLATHEAD	73	99
UPPER CLARK FORK	71	93
BITTERROOT	88	105
LOWER CLARK FORK	94	107
MISSOURI	69	79
JEFFERSON	87	93
MADISON	109	108
GALLATIN	82	97
MISSOURI MAINSTEM	55	64
SMITH-JUDITH-MUSSELSHELL	38	61
SUN-TETON-MARIAS	56	64
MILK	10	42
ST. MARY	83	90
YELLOWSTONE	65	78
UPPER YELLOWSTONE	70	82
LOWER YELLOWSTONE (WYOMING)	59	73
WIND	82	69
SHOSHONE	72	80
BIGHORN	45	87
TONGUE	45	93
POWDER	43	85

Reservoirs

Major reservoir storages statewide were 102 percent of average and 101 percent of last year.

Reservoir storage west of the Continental Divide was 114 percent of average and 106 percent of last year. East of the Continental Divide, reservoir storages were 83 percent of average and 92 percent of last year.

RIVER BASIN	% OF AVERAGE	% OF LAST YEAR
COLUMBIA	114	106
KOOTENAI	121	99
FLATHEAD	110	113
UPPER CLARK FORK	87	116
BITTERROOT	96	90
LOWER CLARK FORK	101	100
MISSOURI	83	94
JEFFERSON	46	65
MADISON	109	100
GALLATIN	156	98
MISSOURI MAINSTEM	85	97
SMITH-JUDITH-MUSSELSHELL	23	64
SUN-TETON-MARIAS	90	93
MILK	26	65
ST. MARY	56	128
YELLOWSTONE	83	85
UPPER YELLOWSTONE	90	87
LOWER YELLOWSTONE	83	84

Streamflow

Across Montana, streamflows are forecast to range between 55 and 65 percent of average. Basins in northcentral, central, and southcentral Montana are currently forecast to be below the flows forecast at this time last year.

West of the Continental Divide, streamflows are forecast to range between 60 and 74 percent of average and east of the Continental Divide, streamflows are forecast to range between 46 and 52 percent of average.

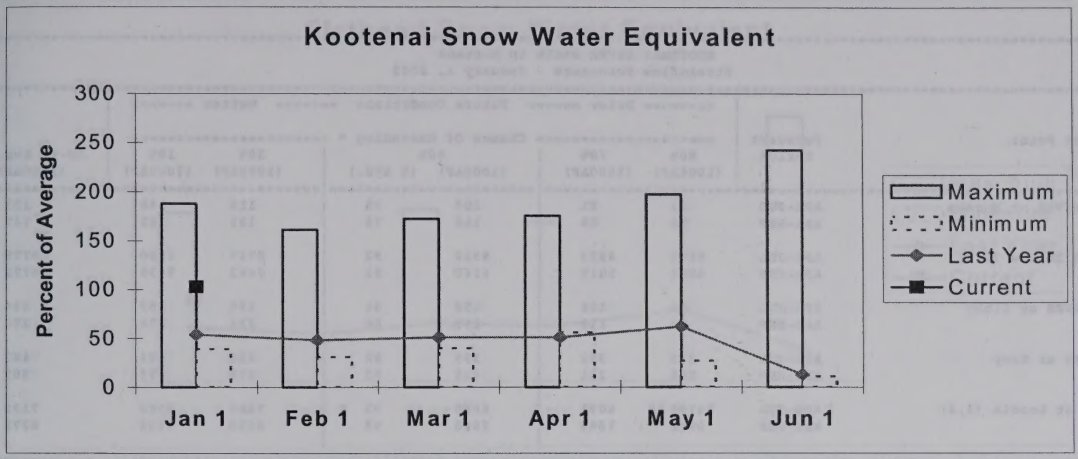
Below are the River Basin streamflow forecasts for the period April 1 through July 31. THESE FORECASTS ASSUME NEAR NORMAL MOISTURE AND RUNOFF CONDITIONS JANUARY THROUGH JULY AND DO NOT ACCOUNT FOR WELL BELOW AVERAGE (70% or less) OR ABOVE AVERAGE (110% or more) SNOWMELT OR SPRING RAIN.

RIVER BASIN	April-July THIS YEAR % OF AVERAGE	April-July LAST YEAR % OF AVERAGE
COLUMBIA	60 to 74	62 to 75
KOOTENAI	66 to 79	50 to 61
FLATHEAD	63 to 72	57 to 66
UPPER CLARK FORK	50 to 68	72 to 84
BITTERROOT	66 to 79	75 to 88
LOWER CLARK FORK	56 to 70	58 to 72
MISSOURI	43 to 59	63 to 80
JEFFERSON	43 to 65	62 to 84
MADISON	60 to 69	81 to 90
GALLATIN	56 to 69	77 to 89
MISSOURI MAINSTEM	39 to 57	61 to 79
SMITH-JUDITH-MUSSELSHELL	37 to 48	46 to 67
SUN-TETON-MARIAS	39 to 59	49 to 68
MILK	28 to 46	27 to 50
ST. MARY	59 to 68	61 to 68
YELLOWSTONE	48 to 60	59 to 72
UPPER YELLOWSTONE	60 to 71	66 to 78
LOWER YELLOWSTONE	37 to 49	52 to 67

NOTE: The *APRIL-JULY LAST YEAR % OF AVERAGE* column above, is what was forecast last year, **not** what actually occurred.

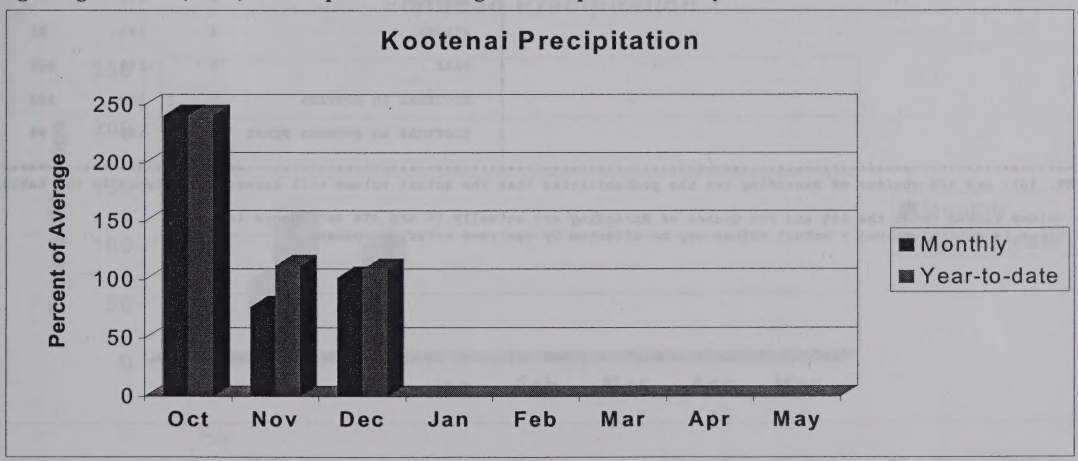
Kootenai River Basin in Montana

Snowpack conditions in the Kootenai River Basin were near average. Snow water content was 103 percent of average and 198 percent of last year.



January maximum swe was established in 1997 and minimum was in 1977; February maximum swe was in 1997 and minimum swe was in 1977; March maximum swe was in 1972 and minimum swe was in 1977; April maximum swe was in 1974 and minimum swe was in 1977; May maximum swe was in 1974 and minimum swe was in 1977; and June maximum swe was in 1974 and minimum swe was in 1992. Average is for the period 1971 through 2000.

Mountain precipitation during December was 105 percent of average and 198 percent of last year. Valley precipitation during December was 73 percent of average and 98 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 109 percent of average and 235 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 66 percent to 79 percent.

Lake Koocanusa storage was 121 percent of average and 99 percent of last year.

KOOTENAI RIVER BASIN in Montana
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
TOBACCO RIVER nr Eureka	APR-JUL	52	81	100	75	119	148	133
	APR-SEP	58	89	110	75	131	162	147
LIBBY RES Inflow (1,2)	APR-JUL	4050	4923	5320	92	5717	6590	5779
	APR-SEP	4885	5817	6240	92	6663	7595	6772
FISHER RIVER nr Libby	APR-JUL	89	106	150	64	194	259	234
	APR-SEP	52	119	165	66	211	278	250
YAAK RIVER nr Troy	APR-JUL	239	332	395	82	458	551	483
	APR-SEP	256	351	415	82	479	574	505
KOOTENAI at Leonia (1,2)	APR-JUL	4794	6091	6680	93	7269	8566	7199
	APR-SEP	5648	7045	7680	93	8315	9712	8275

KOOTENAI RIVER BASIN in Montana
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
LAKE KOOCANUSA	5748.0	3731.0	3764.0	3090.1

KOOTENAI RIVER BASIN in Montana
Watershed Snowpack Analysis - January 1, 2002

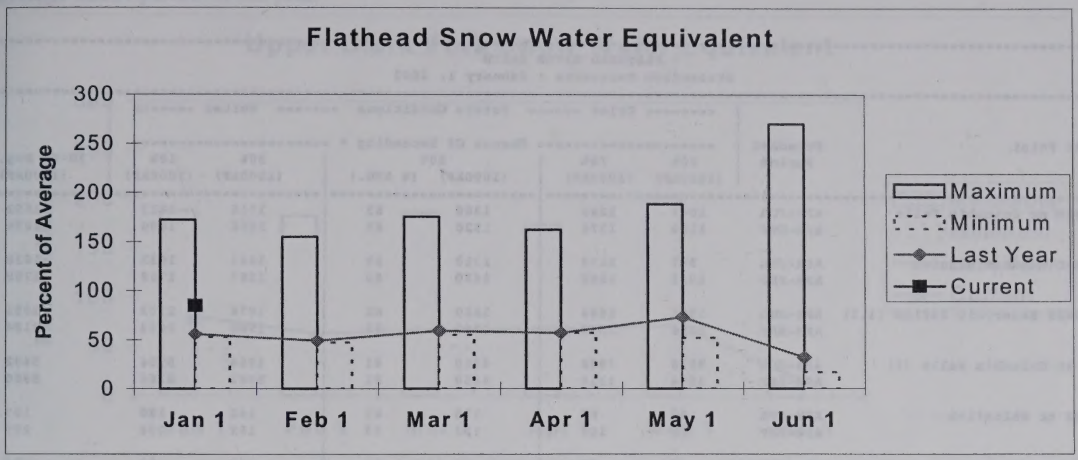
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
KOOTENAY in CANADA	14	192	95
KOOTENAI MAINTSTEM	3	208	114
TOBACCO	3	202	97
FISHER	1	133	61
YAAK	2	179	102
KOOTENAI in MONTANA	9	198	103
KOOTENAI ab BONNERS FERRY	23	195	99

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

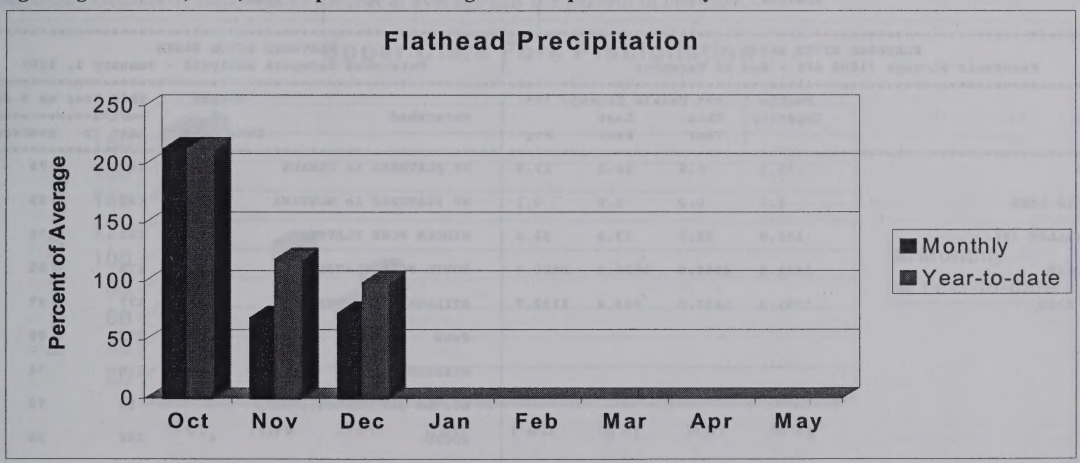
Flathead River Basin

Snowpack conditions in the Flathead River Basin were below average. Snow water content was 85 percent of average and 158 percent of last year.



January maximum swe was established in 1997 and minimum was in 2001; February maximum swe was in 1997 and minimum was in 2001; March maximum swe was in 1972 and minimum was in 2001; April maximum swe was in 1972 and minimum was in 2001; May maximum swe was in 1972 and minimum was in 1992; and June maximum swe was in 1974 and minimum was in 1992. Average is for the period 1971 through 2000.

Mountain precipitation during December was 74 percent of average and 122 percent of last year. Valley precipitation during December was 52 percent of average and 75 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 99 percent of average and 184 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts
Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts **average 63 percent to 72 percent.**

Combined Camas reservoir storage was 44 percent of average and 48 percent of last year; combined Mission Valley reservoir storage was 82 percent of average and 79 percent of last year; Hungry Horse storage was at 106 percent of average and 102 percent of last year; and Flathead Lake storage was 120 percent of average and 145 percent of last year.

FLATHEAD RIVER BASIN
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
NF FLATHEAD nr Columbia Falls	APR-JUL	1047	1245	1380	83	1515	1713	1662
	APR-SEP	1160	1374	1520	83	1666	1880	1836
MF FLATHEAD nr West Glacier	APR-JUL	987	1179	1310	80	1441	1633	1638
	APR-SEP	1091	1293	1430	80	1567	1769	1788
HUNGRY HORSE Reservoir Inflow (1,2)	APR-JUL	1051	1484	1680	82	1876	2309	2051
	APR-SEP	1156	1592	1790	82	1988	2424	2184
FLATHEAD at Columbia Falls (2)	APR-JUL	3214	3956	4460	81	4964	5706	5482
	APR-SEP	3534	4318	4850	81	5382	6166	5960
STILLWATER nr Whitefish	APR-JUL	50	89	115	61	141	180	189
	APR-SEP	62	104	133	64	162	204	209
WHITEFISH nr Kalispell	APR-JUL	42	57	67	64	77	92	104
	APR-SEP	48	65	77	66	89	106	116
ASHLEY CREEK nr Marion (2)	APR-JUL	0.72	2.30	4.15	58	7.29	11.90	7.19
	APR-SEP	0.67	1.84	3.40	51	6.46	10.96	6.72
SWAN RIVER nr Bigfork	APR-JUL	306	389	445	76	501	584	583
	APR-SEP	363	453	515	77	577	667	665
FLATHEAD Lake Inflow (1,2)	APR-JUL	3602	4721	5230	82	5739	6858	6390
	APR-SEP	4008	5151	5670	82	6189	7332	6926

FLATHEAD RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CAMAS (4)	45.2	8.6	18.1	19.5
LOWER JOCKO LAKE	6.4	0.0	0.0	0.1
MISSION VALLEY (8)	100.0	26.7	33.8	32.6
HUNGRY HORSE	3451.0	2560.0	2520.0	2420.9
FLATHEAD LAKE	1791.0	1437.0	989.4	1192.7

FLATHEAD RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

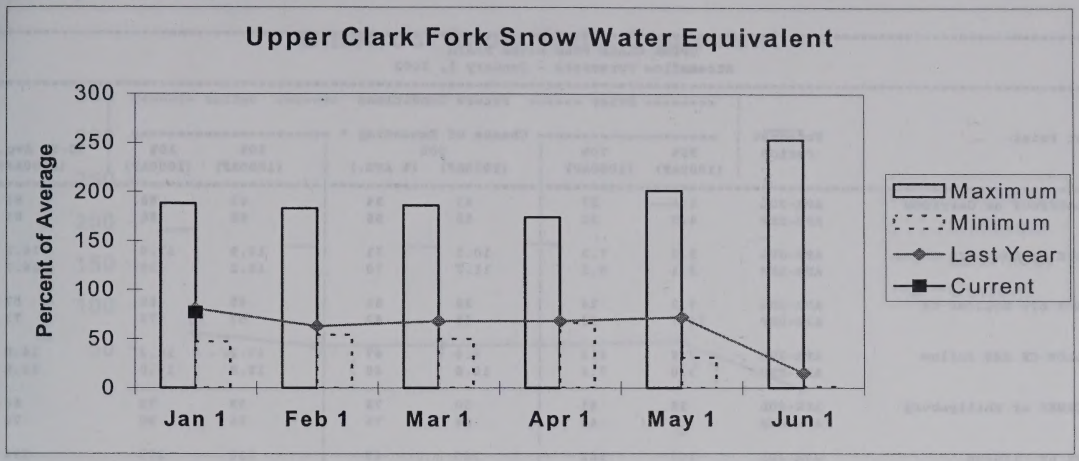
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
NF FLATHEAD in CANADA	2	140	73
NF FLATHEAD in MONTANA	6	198	93
MIDDLE FORK FLATHEAD	5	151	76
SOUTH FORK FLATHEAD	6	175	85
STILLWATER-WHITEFISH	4	177	87
SWAN	6	173	88
MISSION VALLEY	3	118	74
LITTLE BITTERROOT-ASHLEY	4	94	76
JOCKO	4	156	95
FLATHEAD in MONTANA	27	158	84
FLATHEAD RIVER BASIN	29	157	84

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

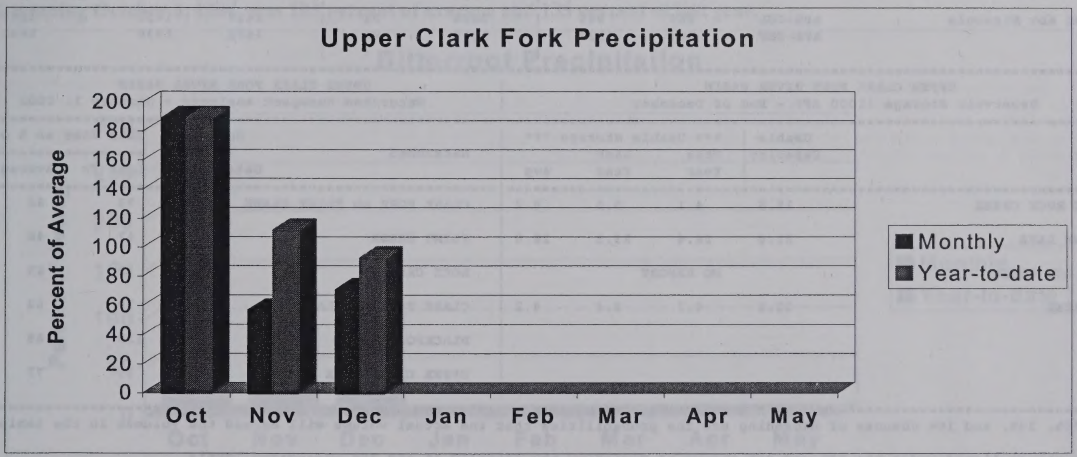
Upper Clark Fork River Basin

Snowpack conditions in the Upper Clark Fork River Basin were below average. Snow water content was 77 percent of average and 97 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1977; February maximum was in 1972 and minimum swe was in 1977; March maximum swe was in 1972 and minimum swe was in 1977; April maximum swe was in 1972 and minimum was in 1994; May maximum swe was in 1972 and minimum swe was in 1977; and June maximum swe was in 1975 and minimum swe was in 1987. Average is for the period 1971 through 2000.

Mountain precipitation during December was 73 percent of average and 106 percent of last year. Valley precipitation during December was 59 percent of average and 120 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 93 percent of average and 105 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 50 percent to 68 percent.

East Fork Rock Creek storage was 50 percent of average and 117 percent of last year; Georgetown Lake was 94 percent of average and 112 percent of last year; Lower Willow Creek storage was not available; and Nevada Creek storage was 112 percent of average and 138 percent of last year.

UPPER CLARK FORK RIVER BASIN
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
LITTLE BLACKFOOT nr Garrison	APR-JUL	1.6	27	45	54	63	88	83
	APR-SEP	4.5	32	50	56	68	96	89
FLINT CREEK nr Southern Cross	APR-JUL	3.2	7.3	10.1	71	12.9	17.0	14.2
	APR-SEP	3.1	8.2	11.7	70	15.2	20	16.7
FLINT CREEK blw Boulder Ck	APR-JUL	9.2	24	35	61	45	60	57
	APR-SEP	14.7	33	45	62	57	75	73
LOWER WILLOW CK RES Inflow	APR-JUL	2.6	6.6	9.4	67	12.2	16.2	14.0
	APR-SEP	3.0	7.2	10.0	68	12.8	17.0	14.8
MF ROCK CREEK nr Philipsburg	APR-JUL	28	41	50	76	59	72	66
	APR-SEP	32	46	56	76	66	80	74
ROCK CREEK nr Clinton	APR-JUL	105	162	200	68	238	295	296
	APR-SEP	132	193	235	71	277	338	333
NEVADA CREEK nr Finn	APR-JUL	1.4	7.1	11.0	58	14.9	21	19.1
	APR-SEP	2.2	8.2	12.2	58	16.2	22	21
BLACKFOOT RIVER nr Bonner	APR-JUL	415	570	675	81	780	935	835
	APR-SEP	475	639	750	81	861	1025	926
CLARK FORK abv Milltown	APR-JUL	246	412	525	81	638	804	652
	APR-SEP	301	485	610	81	735	919	755
CLARK FORK abv Missoula	APR-JUL	669	985	1200	81	1415	1731	1487
	APR-SEP	784	1127	1360	81	1593	1936	1681

UPPER CLARK FORK RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
EAST FORK ROCK CREEK	15.6	4.1	3.5	8.2
GEORGETOWN LAKE	31.0	26.4	23.5	28.0
LOWER WILLOW CREEK		NO REPORT		
NEVADA CREEK	12.6	4.7	3.4	4.2

UPPER CLARK FORK RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

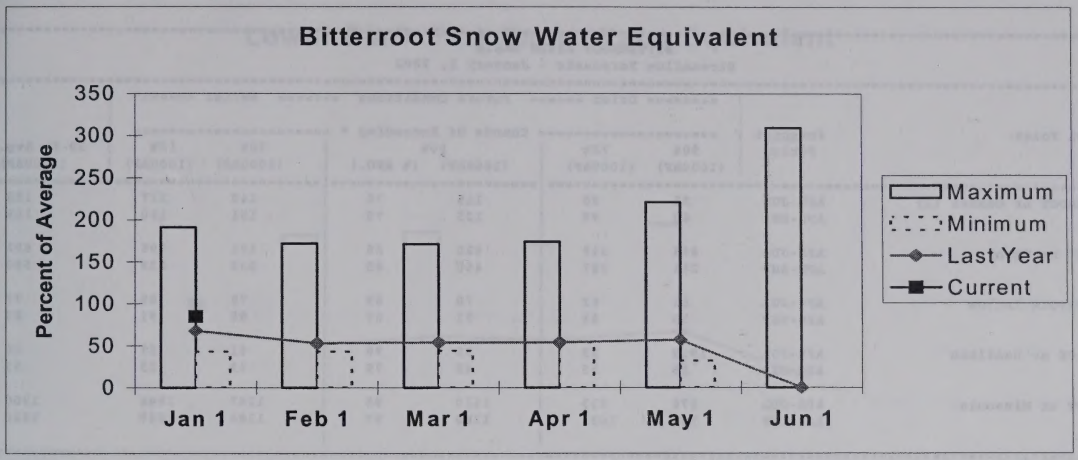
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CLARK FORK ab FLINT CREEK	9	73	66
FLINT CREEK	5	47	46
ROCK CREEK	3	72	63
CLARK FORK ab BLACKFOOT	14	70	62
BLACKFOOT	13	128	89
UPPER CLARK FORK BASIN	26	97	77

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

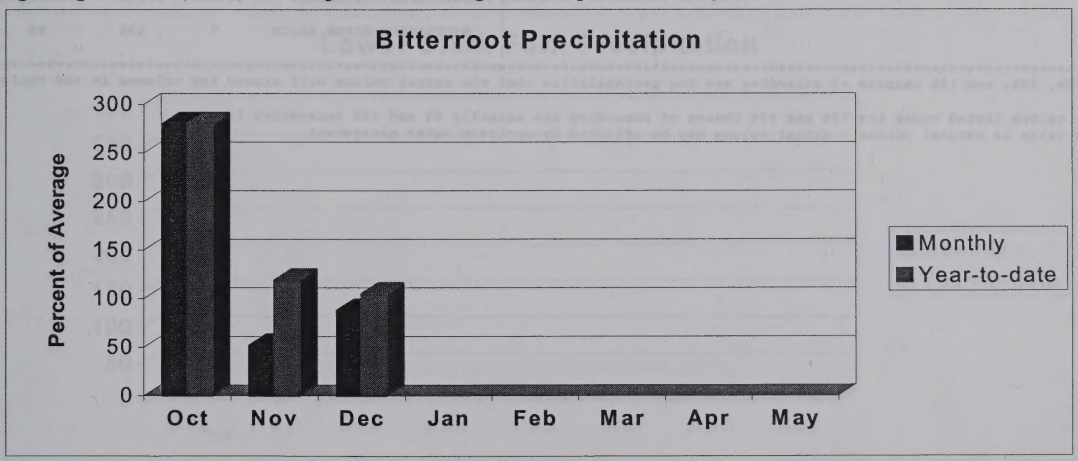
Bitterroot River Basin

Snowpack conditions in the Bitterroot River Basin were below average. Snow water content was 85 percent of average and 131 percent of last year.



January maximum swe was established in 1997 and minimum swe in 1977; February maximum swe was in 1972 and minimum was in 1977; March maximum swe was in 1972 and minimum swe was in 1977; April maximum swe was in 1972 and minimum swe was in 2001; May maximum swe was in 1972 and minimum swe was in 1987; and June maximum swe was 1972 and 1974 and 1974 and minimum swe was in 1987, 1992, 1994, and 2001. Average is for the period 1971 through 2000.

Mountain precipitation during December was 90 percent of average and 134 percent of last year. Valley precipitation during December was 68 percent of average and 137 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 105 percent of average and 135 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 66 percent to 79 percent.

Painted Rocks Lake storage was 117 percent of average and 100 percent of last year and Como storage was 78 percent of average and 80 percent of last year.

BITTERROOT RIVER BASIN
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WF BITTERROOT nr Conner (2)	APR-JUL	53	90	115	76	140	177	152
	APR-SEP	60	99	125	75	151	190	166
BITTERROOT nr Darby	APR-JUL	244	349	420	86	491	596	491
	APR-SEP	281	387	460	85	533	639	540
COMO RESERVOIR Inflow	APR-JUL	51	62	70	89	78	89	79
	APR-SEP	53	64	72	87	80	91	83
SKALKAHO CK nr Hamilton	APR-JUL	19.3	29	35	76	41	51	46
	APR-SEP	25	35	42	79	49	59	53
BITTERROOT at Missoula	APR-JUL	674	933	1110	85	1287	1546	1300
	APR-SEP	780	1036	1210	85	1384	1640	1420

BITTERROOT RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
PAINTED ROCKS LAKE	31.7	8.8	8.8	7.5
COMO	34.9	7.0	8.7	9.0

BITTERROOT RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

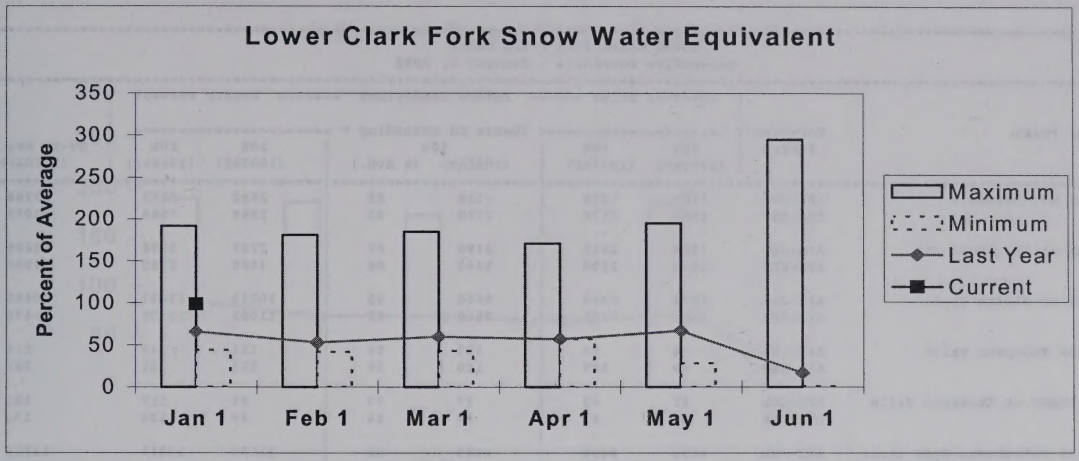
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WEST FORK BITTERROOT	2	131	83
EAST SIDE BITTERROOT	3	112	78
WEST SIDE BITTERROOT	3	147	89
BITTERROOT RIVER BASIN	7	131	85

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

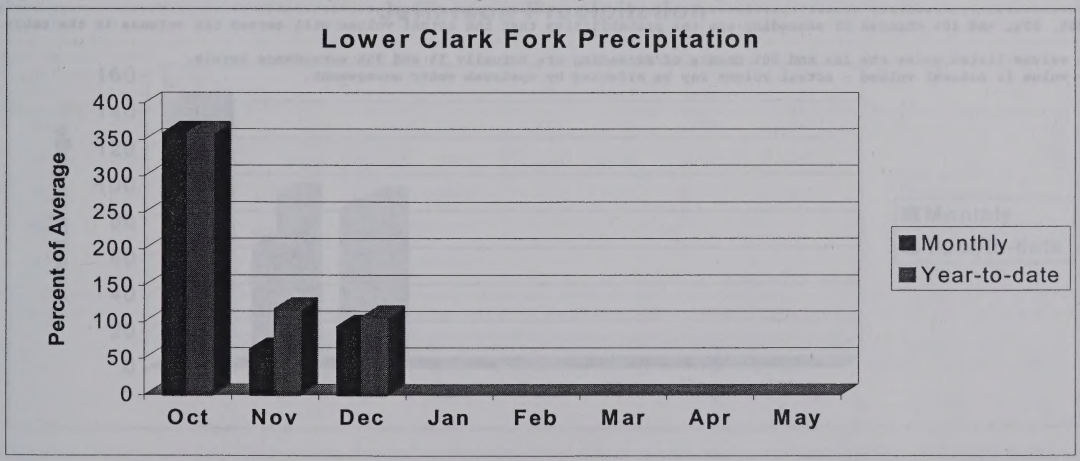
Lower Clark Fork River Basin

Snowpack conditions in the Lower Clark Fork River Basin were near average. Snow water content was 99 percent of average and 159 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1977; February maximum swe was in 1972 and minimum swe was in 1977; March maximum swe was in 1972 and minimum was in 1977; April maximum swe was in 1972 and minimum swe was in 1981; May maximum swe was in 1972 and minimum swe was in 1977; and June maximum swe was in 1974 and minimum swe was in 1977. Average is for the period 1971 through 2000.

Mountain precipitation during December was 62 percent of average and 59 percent of last year. Valley precipitation Mountain precipitation during December was 91 percent of average and 150 percent of last year. Valley precipitation during December was 106 percent of average and 129 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 107 percent of average and 174 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 56 percent to 70 percent.

Noxon Rapids storage was 101 percent of average and 100 percent of last year.

LOWER CLARK FORK RIVER BASIN
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CLARK FORK blw Missoula	APR-JUL	1367	1928	2310	83	2692	3253	2788
	APR-SEP	1596	2176	2570	83	2964	3544	3099
CLARK FORK at St. Regis (1)	APR-JUL	1344	2613	3190	87	3767	5036	3686
	APR-SEP	1490	2900	3540	86	4180	5590	4095
CLARK FORK nr Plains (1,2)	APR-JUL	4279	7285	8650	83	10015	13021	10450
	APR-SEP	4694	7999	9500	83	11001	14306	11470
THOMPSON nr Thompson Falls	APR-JUL	44	89	120	56	151	196	214
	APR-SEP	59	107	140	58	173	221	240
PROSPECT CREEK at Thompson Falls	APR-JUL	42	63	77	63	91	112	123
	APR-SEP	48	69	84	64	99	120	132
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	4699	8090	9630	82	11170	14561	11730
	APR-SEP	5173	8905	10600	82	12295	16027	12910

LOWER CLARK FORK RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
NOXON RAPIDS	335.0	317.5	317.9	315.8

LOWER CLARK FORK RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

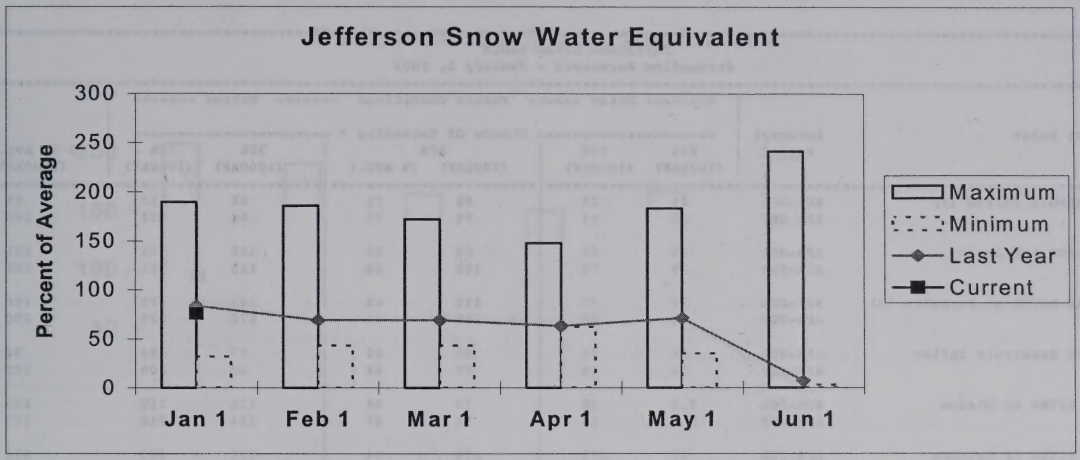
Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
LOWER CLARK FORK BASIN	8	158	99

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

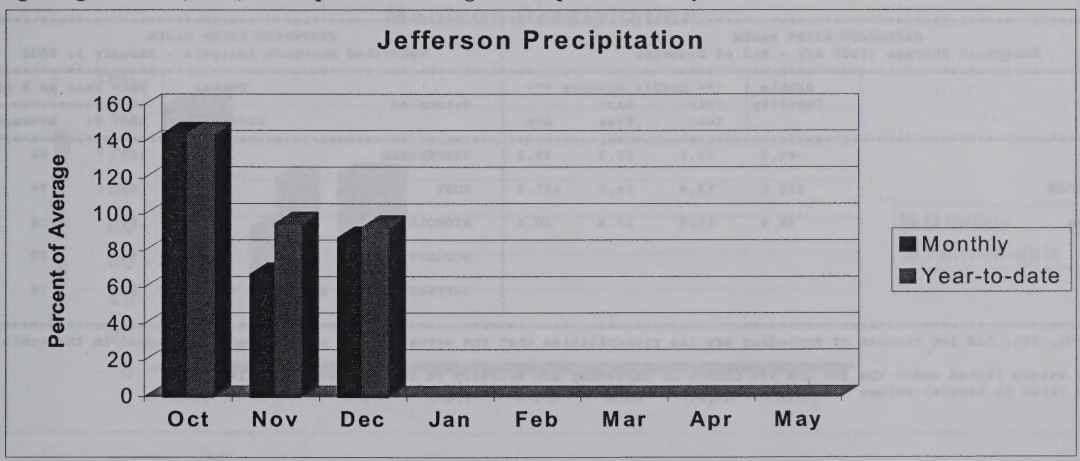
Jefferson River Basin

Snowpack conditions in the Jefferson River Basin were below average. Snow water content was 76 percent of average and 88 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1977; February maximum swe was in 1997 and minimum was in 1977; March maximum swe was in 1972 and minimum was in 1977; April maximum swe was in 1997 and minimum was in 1977; May maximum swe was in 1975 and minimum swe was in 1977; and June maximum swe was in 1982 and minimum in 1987. Average is for the period 1971 through 2000.

Mountain precipitation during December was 87 percent of average and 146 percent of last year. Valley precipitation during December was 92 percent of average and 181 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 93 percent of average and 94 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 43 percent to 65 percent.

Lima storage was 38 percent of average and 60 percent of last year; Clark Canyon storage was 43 percent of average and 63 percent of last year; and Ruby River storage was 76 percent of average and 87 percent of last year.

JEFFERSON RIVER BASIN
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
LIMA RESERVOIR Inflow (2)	APR-JUL	24	50	68	71	86	112	96
	APR-SEP	25	54	74	71	94	123	104
CLARK CANYON Inflow (2)	APR-JUL	31	60	80	61	100	129	131
	APR-SEP	39	75	100	64	125	161	156
BEAVERHEAD RIVER at Barretts (2)	APR-JUL	27	77	110	66	143	193	168
	APR-SEP	32	90	130	65	170	228	200
RUBY RIVER Reservoir Inflow	APR-JUL	26	43	55	66	67	84	84
	APR-SEP	34	54	67	66	80	100	101
BIG HOLE RIVER at Wisdom	APR-JUL	7.0	30	70	64	110	168	110
	APR-SEP	9.0	22	78	67	134	216	117
BIG HOLE RIVER nr Melrose	APR-JUL	97	271	390	64	509	683	610
	APR-SEP	114	302	430	65	558	746	660
BOULDER RIVER nr Boulder	APR-JUL	6.5	35	54	69	73	102	78
	APR-SEP	7.8	38	59	69	80	110	85
WILLOW CREEK Reservoir Inflow	APR-JUL	3.2	6.3	11.5	64	16.7	25	17.9
	APR-SEP	3.4	7.0	13.0	65	19.0	28	20
JEFFERSON RIVER nr Three Forks (2)	APR-JUL	79	315	475	61	635	871	780
	APR-SEP	96	348	520	61	692	944	860

JEFFERSON RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
LIMA	84.0	12.1	20.3	32.2
CLARK CANYON	255.6	59.6	95.1	137.5
RUBY RIVER	38.8	15.5	17.9	20.4

JEFFERSON RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

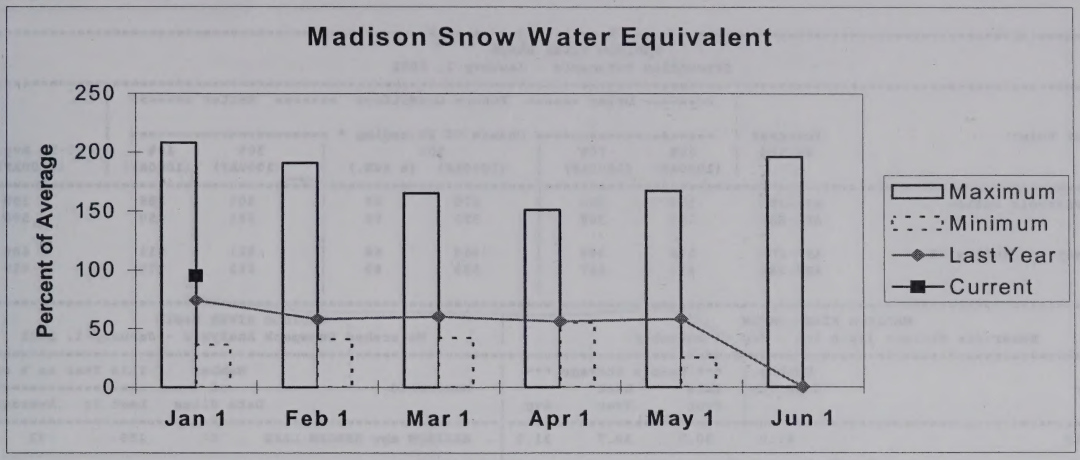
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
BEAVERHEAD	8	103	86
RUBY	4	83	78
BIGHOLE	9	98	76
BOULDER	6	54	55
JEFFERSON RIVER BASIN	22	88	76

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

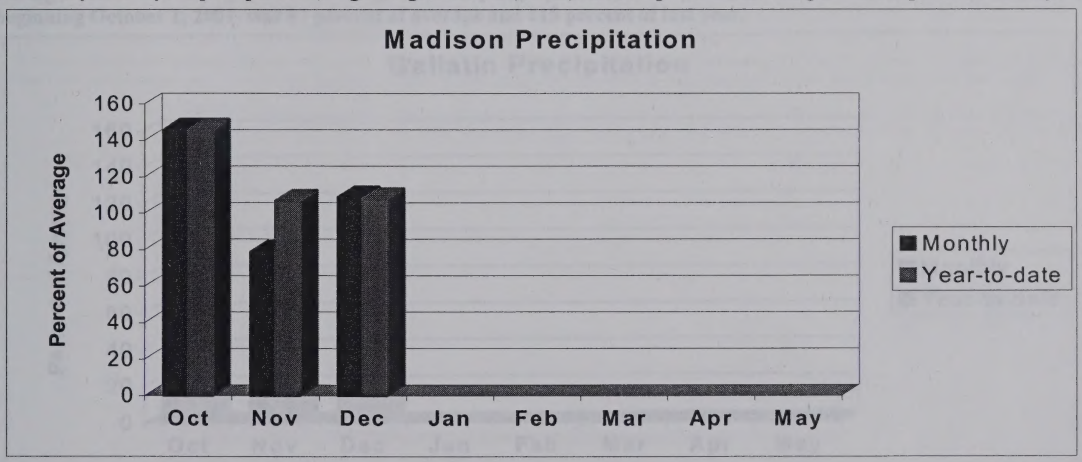
Madison River Basin

Snowpack conditions in the Madison River Basin were near average. Snow water content was 95 percent of average and 129 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1977; February maximum swe was in 1997 and minimum was in 1977; March maximum swe was in 1997 and minimum was in 1977; April maximum swe was in 1997 and minimum was in 1977; May maximum swe was in 1997 and minimum swe was in 1977; and June maximum swe was in 1995 and minimum in 1987 and 2001. Average is for the period 1971 through 2000.

Mountain and valley precipitation during December was 109 percent of average and 178 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 108 percent of average and 122 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 60 percent to 69 percent.

Ennis Lake storage was 97 percent of average and 100 percent of last year and Hebgen Lake storage was 111 percent of average and 100 percent of last year.

MADISON RIVER BASIN
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HEBGEN Reservoir Inflow	APR-JUL	184	235	270	69	305	356	390
	APR-SEP	250	309	350	70	391	450	500
ENNIS Reservoir Inflow (2)	APR-JUL	309	399	460	68	521	611	680
	APR-SEP	410	517	590	69	663	770	850

MADISON RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ENNIS LAKE	41.0	30.7	30.7	31.5
HEBGEN LAKE	377.5	295.9	297.0	267.6

MADISON RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

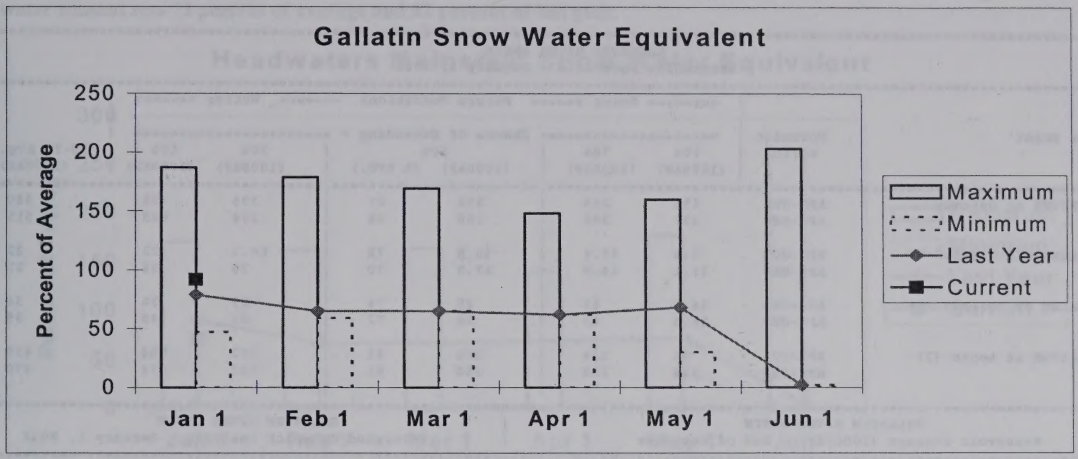
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
MADISON abv HEBGEN LAKE	6	159	92
MADISON blw HEBGEN LAKE	7	113	98
MADISON RIVER BASIN	13	129	95

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

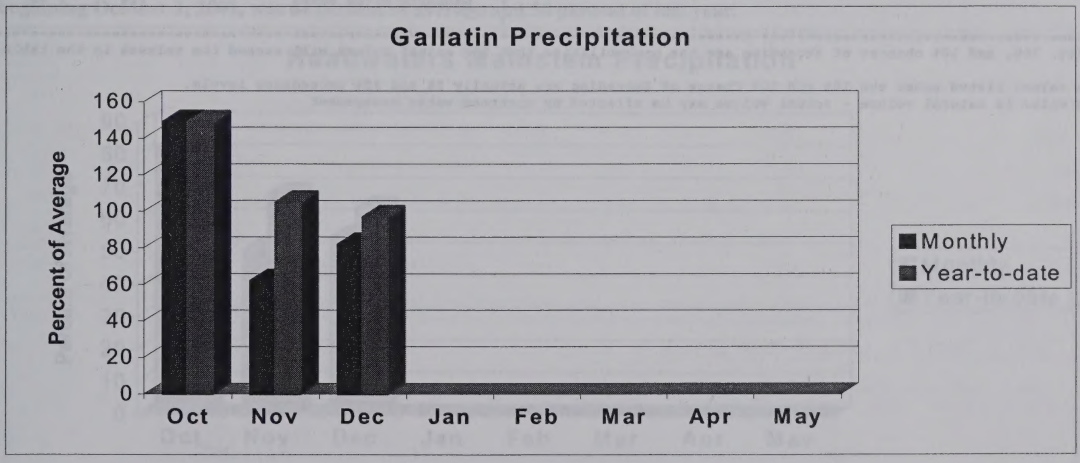
Gallatin River Basin

Snowpack conditions in the Gallatin River Basin were near average. Snow water content was 92 percent of average and 114 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1966; February maximum swe was in 1997 and minimum was in 1977; March maximum swe was in 1997 and minimum was in 1977; April maximum swe was in 1997 and minimum was in 1987; May maximum swe was in 1970 and minimum swe was in 1987; and June maximum swe was in 1975 and minimum in 2001. Average is for the period 1971 through 2000.

Mountain precipitation during December was 82 percent of average and 123 percent of last year. Valley precipitation during December was 86 percent of average and 135 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 97 percent of average and 115 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 56 percent to 69 percent.

Middle Creek storage was 156 percent of average and 98 percent of last year.

GALLATIN RIVER BASIN

Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
GALLATIN RIVER nr Gateway	APR-JUL	195	255	295	67	335	395	440
	APR-SEP	237	304	350	68	396	463	515
HYALITE RESERVOIR Inflow	APR-JUL	9.8	13.4	15.8	72	18.2	22	22
	APR-SEP	11.1	14.9	17.5	70	20	24	25
HYALITE CREEK nr Bozeman (2)	APR-JUL	14.5	21	25	74	29	36	34
	APR-SEP	16.5	23	28	72	33	40	39
GALLATIN RIVER at Logan (2)	APR-JUL	96	218	300	61	382	504	495
	APR-SEP	124	258	350	61	442	576	570

GALLATIN RIVER BASIN

Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MIDDLE CREEK	10.2	6.4	6.5	4.1

GALLATIN RIVER BASIN

Watershed Snowpack Analysis - January 1, 2002

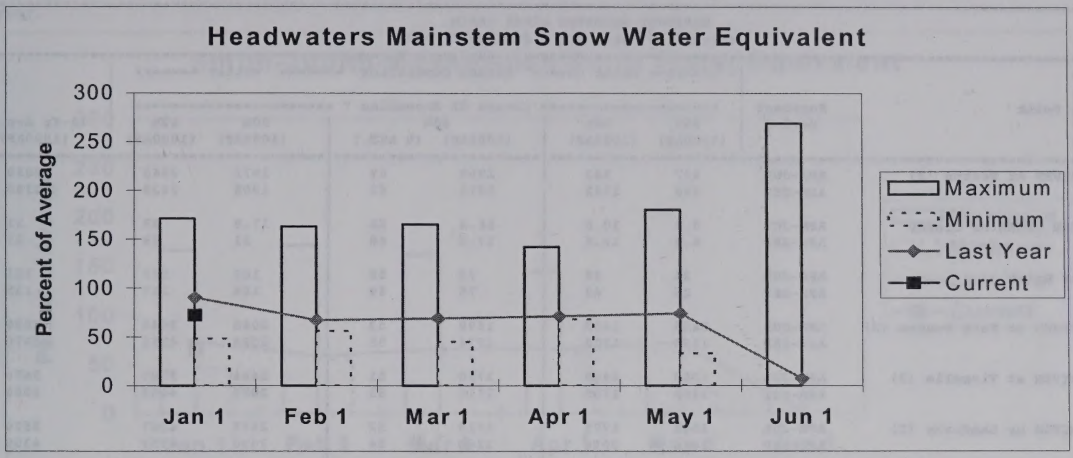
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
UPPER GALLATIN	4	129	103
HYALITE	2	81	65
BRIDGER	1	112	92
GALLATIN RIVER BASIN	7	114	92

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

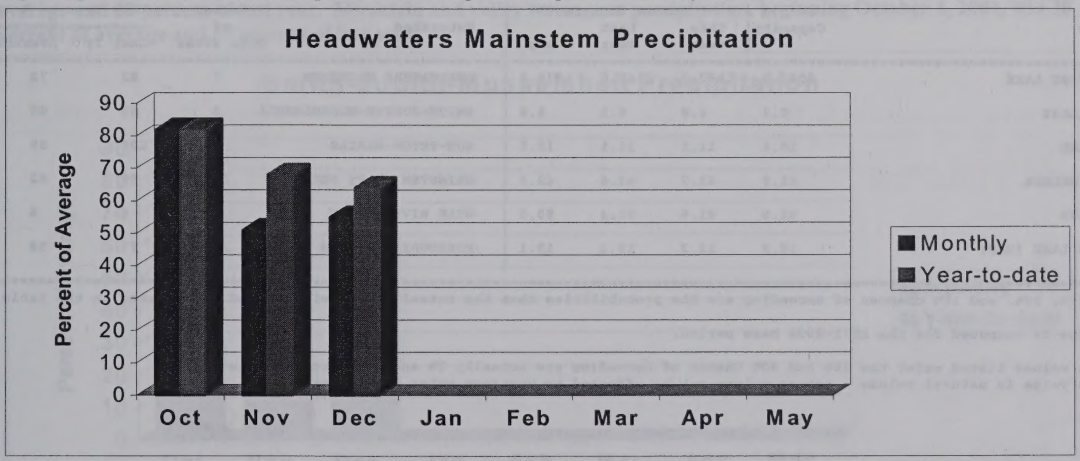
Missouri Mainstem River Basin

Snowpack conditions for the Missouri Mainstem are well below average. Snow water content is 58 percent of average and 77 percent of last year. Snowpack in the Headwaters Missouri Mainstem River Basin were below average. Snow water content was 72 percent of average and 82 percent of last year.



January maximum swe was established in 1997 and minimum swe in 1977; February maximum swe was in 1972 and minimum swe was in 1977 and 1988; March maximum swe in 1972 and minimum swe was in 1977; April maximum swe was in 1972 and minimum swe was in 1961 and 1966; May maximum swe was in 1975 and minimum swe was in 1977; and June maximum swe was in 1975 and minimum swe was in 1992. Average is for the period 1971 through 2000.

Mountain precipitation during December was 73 percent of average and 109 percent of last year. Valley precipitation during December was 32 percent of average and 60 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 64 percent of average and 58 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 39 percent to 57 percent.

Canyon Ferry Lake storage was 83 percent of average and 96 percent of last year; Helena Valley storage was 100 percent of average and 74 percent of last year; Lake Helena storage was 89 percent of average and 100 percent of last year; Hauser & Helena storage was 101 percent of average and 100 percent of last year; Holter Lake storage was 102 percent of average and 100 percent of last year; and Fort Peck Lake storage was 81 percent of average and 88 percent of last year.

MISSOURI MAINSTEM RIVER BASIN
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
MISSOURI RIVER at Toston (2)	APR-JUL	477	943	1260	62	1577	2043	2050
	APR-SEP	550	1142	1475	62	1808	2438	2390
PRICKLY PEAR CREEK nr Clancy	APR-JUL	5.3	10.6	14.2	68	17.8	23	21
	APR-SEP	6.2	12.6	17.0	68	21	28	25
DEARBORN nr Craig	APR-JUL	24	38	70	58	102	149	121
	APR-SEP	26	42	75	60	108	157	125
MISSOURI RIVER at Fort Benton (2)	APR-JUL	1226	1435	1590	53	2048	3648	2990
	APR-SEP	1464	1714	1974	55	2524	4355	3570
MISSOURI RIVER at Virgelle (2)	APR-JUL	1208	1449	1750	51	2464	3795	3450
	APR-SEP	1462	1705	2145	53	2859	4466	4060
MISSOURI RIVER nr Landusky (2)	APR-JUL	1365	1771	1910	52	2468	4207	3690
	APR-SEP	1610	2088	2360	54	3090	4959	4350
MISSOURI RIVER below Fort Peck (2)	APR-JUL	1159	1459	1895	51	2634	4151	3740
	APR-SEP	1386	1775	2177	50	3118	4850	4330
LAKE SAKAKAWEA Inflow (2)	APR-JUL	3312	4578	5860	60	7165	9837	9740
	APR-SEP	3920	5070	6660	60	8250	11312	11200

MISSOURI MAINSTEM RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CANYON FERRY LAKE	2043.0	1392.0	1445.0	1670.3
HELENA VALLEY	9.2	4.8	6.5	4.8
LAKE HELENA	10.4	11.1	11.1	12.5
HAUSER & HELENA	61.9	63.7	63.6	62.9
HOLTER LAKE	81.9	81.6	81.4	80.0
FORT PECK LAKE (MAF)	18.9	12.2	12.2	15.1

MISSOURI MAINSTEM RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
HEADWATERS MAINSTEM	7	82	72
SMITH-JUDITH-MUSSELSHELL	8	88	65
SUN-TETON-MARIAS	7	109	59
MAINSTEM ab FT PECK RES	21	88	62
MILK RIVER BASIN	4	6	6
MISSOURI MAINSTEM BASIN	24	77	58

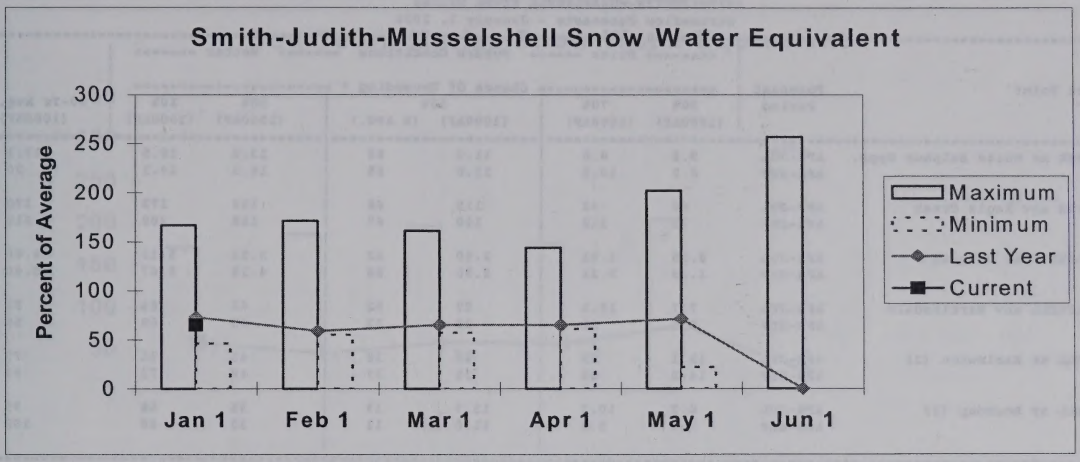
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

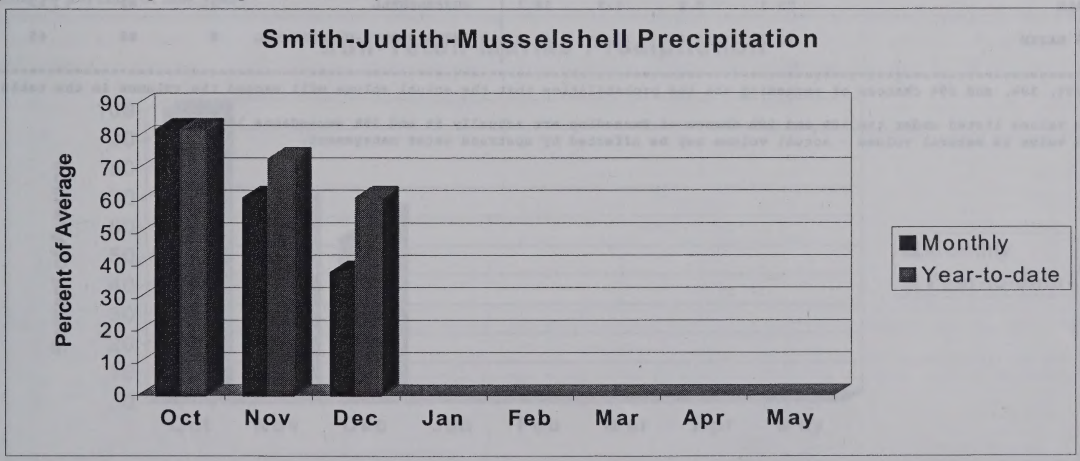
Smith-Judith-Musselshell River Basins

Snowpack conditions in the Smith-Judith-Musselshell River Basins were well below average. Snow water content in the Smith River Basin was 73 percent of average and 109 percent of last year; in the Judith River Basin was 57 percent of average and 72 percent of last year; and in the Musselshell River Basin was 62 percent of average and 82 percent of last year.



January maximum swe was established in 1997 and minimum swe in 1988; February maximum swe was in 1978 and minimum swe was in 1987; March maximum swe was in 1978 and minimum swe was in 1987; April maximum swe was in 1970 and minimum swe was in 1992; and May maximum swe was in 1970 and minimum swe was in 1987; and June maximum swe was in 1967 and minimum swe was in 1987, 1992, 1994, and 2001. Average is for the period 1971 through 2000.

Mountain and valley precipitation during December in the Smith-Belts was 61 percent of average and 92 percent of last year; in the Judith was 25 percent of average and 35 percent of last year; and in the Musselshell was 25 percent of average and 33 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 38 percent of average and 57 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 37 percent to 48 percent.

Smith River storage was 21 percent of average and 63 percent of last year; Bair storage was 37 percent of average and 93 percent of last year; Martinsdale storage was 2 percent of average and 11 percent of last year; and Deadman's Basin was 27 percent of average and 67 percent of last year.

SMITH-JUDITH-MUSSELSHELL RIVER BASINS
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SHEEP CREEK nr White Sulphur Spgs.	APR-JUL	5.5	8.8	11.0	64	13.2	16.5	17.1
	APR-SEP	6.9	10.5	13.0	65	15.5	19.1	20
SMITH RIVER abv Eagle Creek	APR-JUL	58	92	115	66	138	172	175
	APR-SEP	71	112	140	67	168	209	210
NF MUSSELSHELL nr Delpine	APR-JUL	0.95	1.81	2.40	52	3.53	5.19	4.60
	APR-SEP	1.19	2.21	2.90	54	4.18	6.07	5.40
SF MUSSELSHELL abv Martinsdale	APR-JUL	7.7	19.2	27	52	42	64	52
	APR-SEP	8.6	21	29	52	45	68	56
MUSSELSHELL at Harlowton (2)	APR-JUL	13.1	23	29	38	46	71	77
	APR-SEP	14.0	24	30	37	48	73	81
MUSSELSHELL nr Roundup (2)	APR-JUL	6.2	10.4	13.3	13	35	68	99
	APR-SEP	5.0	9.0	11.0	11	33	66	102

SMITH-JUDITH-MUSSELSHELL RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
SMITH RIVER	10.6	1.2	1.9	5.7
BAIR	7.0	1.3	1.4	3.5
MARTINSDALE	23.1	0.2	1.9	10.1
DEADMAN'S BASIN	72.2	11.4	17.5	44.0

SMITH-JUDITH-MUSSELSHELL RIVER BASINS
Watershed Snowpack Analysis - January 1, 2002

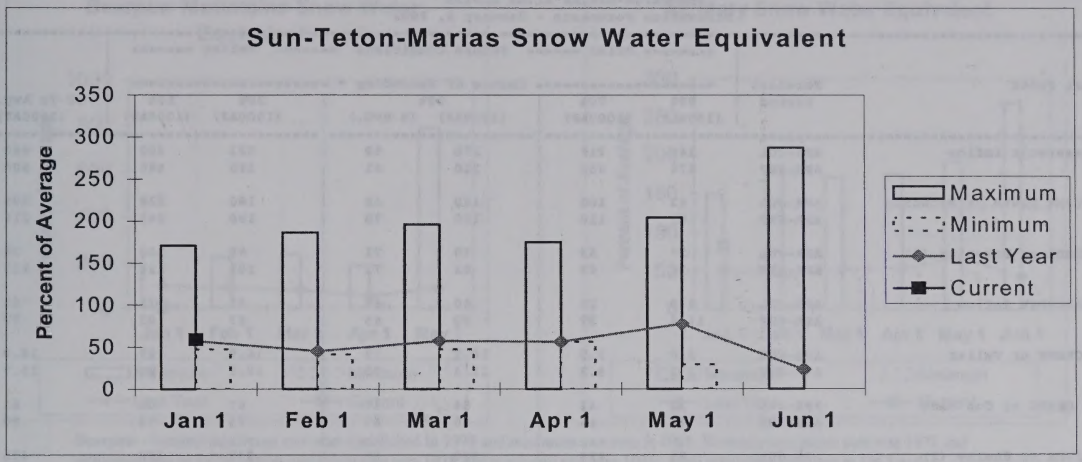
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SMITH	4	109	73
JUDITH	4	72	57
MUSSELSHELL	3	82	62
SMITH-JUDITH-MUSSELSHELL	8	88	65

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

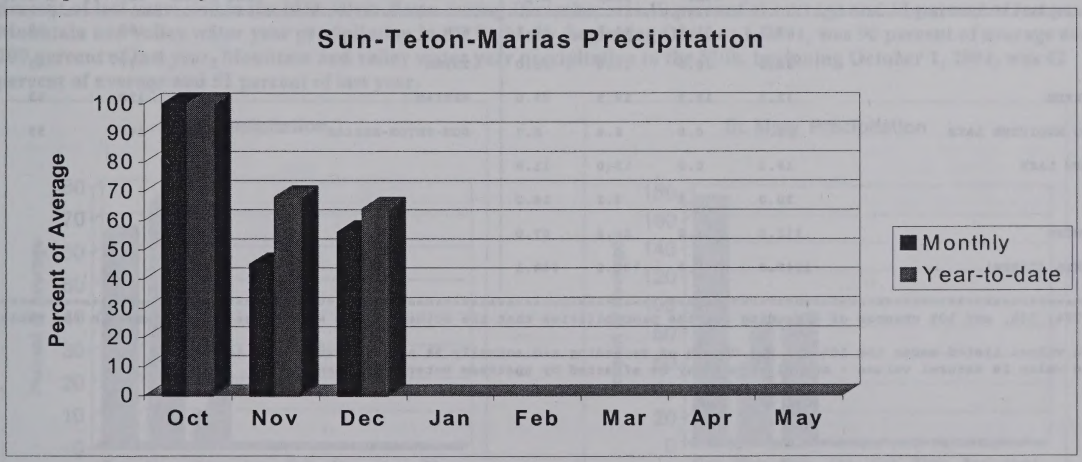
Sun-Teton-Marias River Basins

The combined snowpack conditions for the Sun-Teton-Marias River Basins were well below average. Snow water content was 59 percent of average and 109 percent of last year. Snow water content in the Sun River Basin was 58 percent of average and 100 percent of last year; in the Teton River Basin was 45 percent of average and 77 percent of last year; and in the Marias River Basin was 63 percent of average and 120 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1988; February maximum swe was in 1972 and minimum swe was in 2001; March maximum swe was in 1972 and minimum swe was in 1984; April maximum swe was in 1972 and minimum swe was in 1984; May maximum swe was in 1972 and minimum swe was in 1977; and June maximum was in 1972 and minimum swe was in 1987, 1992, and 1998. Average is for the period 1971 through 2000.

Mountain and valley precipitation during December in the Sun was 47 percent of average and 70 percent of last year; in the Teton was 51 percent of average and 61 percent of last year; and in the Marias was 60 percent of average and 85 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 64 percent of average and 94 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 39 percent to 59 percent.

Gibson storage was 51 percent of average and 146 percent of last year; Pishkun storage was 111 percent of average and 103 percent of last year; Willow Creek storage was 63 percent of average and 70 percent of last year; Lower Two Medicine Lake storage was 0 percent of average and 0 percent of last year; Four Horns Lake storage was 0 percent of average and 0 percent of last year; Swift storage was 32 percent of average and 110 percent of last year; Lake Frances storage was 36 percent of average and 161 percent of last year; and Lake Elwell (Tiber) storage was 103 percent of average and 94 percent of last year.

SUN-TETON-MARIAS RIVER BASINS
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
GIBSON Reservoir Inflow	APR-JUL	140	217	270	59	323	400	460
	APR-SEP	174	255	310	61	365	446	505
TWO MEDICINE RIVER nr Browning	APR-JUL	42	100	140	68	180	238	205
	APR-SEP	51	110	150	70	190	249	215
BADGER CREEK nr Browning (2)	APR-JUL	27	53	70	71	88	113	99
	APR-SEP	36	63	82	71	101	128	115
SWIFT RESERVOIR Inflow	APR-JUL	9.0	28	40	63	53	71	64
	APR-SEP	17.4	37	50	65	63	83	77
DUPUYER CREEK nr Valier	APR-JUL	2.0	3.5	10.2	73	16.9	27	14.0
	APR-SEP	2.2	4.2	11.4	73	18.6	29	15.7
CUT BANK CREEK at Cut Bank	APR-JUL	22	41	54	67	67	86	81
	APR-SEP	26	46	60	67	74	94	90
MARIAS RIVER nr Shelby (2)	APR-JUL	81	114	220	53	326	482	415
	APR-SEP	91	122	230	52	338	497	440
TETON nr Dutton	APR-JUL	2.6	7.0	10.0	20	25	47	51
	APR-SEP	3.9	7.8	10.5	18	25	47	59

SUN-TETON-MARIAS RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
GIBSON	99.1	21.8	14.9	42.5
PISHKUN	32.0	20.0	19.4	18.0
WILLOW CREEK	32.2	13.9	19.9	22.0
LOWER TWO MEDICINE LAKE	11.9	0.0	6.4	8.7
FOUR HORNS LAKE	19.2	0.0	13.0	11.8
SWIFT	30.0	4.5	4.1	14.2
LAKE FRANCES	112.0	24.2	20.8	67.0
LAKE ELWELL (TIBER)	1347.0	667.8	708.6	648.1

SUN-TETON-MARIAS RIVER BASINS
Watershed Snowpack Analysis - January 1, 2002

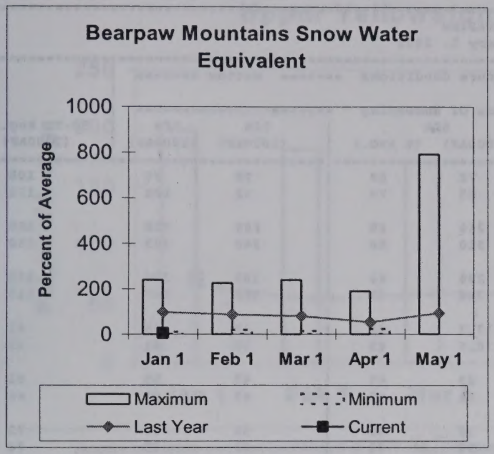
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SUN	2	100	58
TETON	3	77	45
MARIAS	4	120	63
SUN-TETON-MARIAS	7	109	59

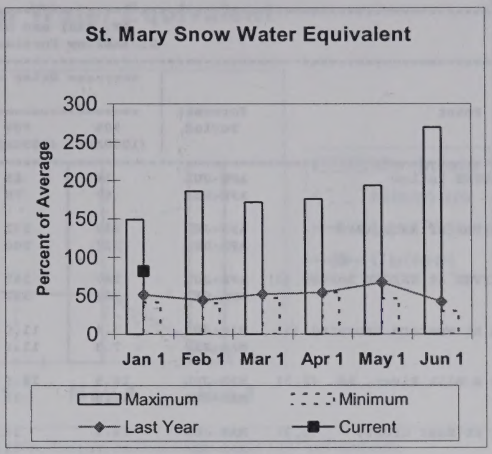
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

St. Mary and Milk River Basins

Snowpack conditions in the St. Mary and Milk River Basins were well below average. Snow water content in the Saint Mary River Basin was 82 percent of average 162 percent of last year. The Milk River Basin (Bearpaw Mountains) was 6 percent of average and 6 percent of last year.

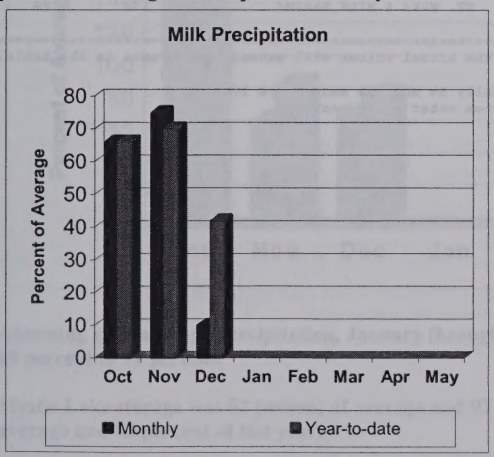


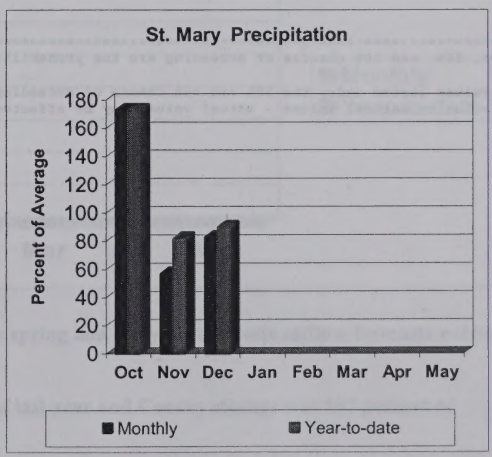


Bearpaw - January maximum swe was established in 1978 and minimum swe was in 1981; February maximum swe was 1978 and minimum was in 1973; March maximum swe was 1978 and minimum swe was 1995; April maximum swe was in 1985 and minimum swe was in 1973, 1983, and 1986; May maximum swe was 1975 and the minimum, 0.0, has occurred in several years. Average is for the period 1971 through 2000.

St. Mary - January maximum swe was established in 1997 and minimum swe was in 1988; February maximum swe was in 1972 and minimum swe was in 2001; March maximum swe was in 1972 and minimum swe was in 1977; April maximum swe was in 1967 and 1972 and minimum swe was in 2001; May maximum swe was in 19972 and minimum swe was in 1977; and June maximum swe was in 1972 and minimum swe was 1992. Average is for the period 1971 through 2000.

Mountain and valley precipitation in the St. Mary River Basin during December was 83 percent of average and 141 percent of last year; and in the Milk River Basin during December was 10 percent of average and 12 percent of last year. Mountain and valley water year precipitation in the St. Mary, beginning October 1, 2001, was 90 percent of average and 209 percent of last year. Mountain and valley water year precipitation in the Milk, beginning October 1, 2001, was 42 percent of average and 51 percent of last year.





Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts in the St. Mary average 59 percent to 68 percent. In the Milk the spring and early summer streamflow forecasts average 28 percent to 46 percent.

Lake Sherburne storage was 56 percent of average and 128 percent of last year; Fresno storage was 18 percent of average and 45 percent of last year; Beaver Creek storage was 29 percent of average and 29 percent of last year; and Nelson storage was 37 percent of average and 101 percent of last year.

ST. MARY and MILK RIVER BASINS
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
LAKE SHERBURNE Inflow	APR-JUL	54	65	72	69	79	90	105
	APR-SEP	67	78	85	70	92	103	122
ST. MARY RIVER nr Babb (2)	APR-JUL	192	232	260	68	288	328	385
	APR-SEP	237	280	310	69	340	383	450
ST. MARY RIVER at US/CAN Border (2)	APR-JUL	187	245	285	66	325	383	435
	APR-SEP	241	302	344	67	386	447	515
MILK RIVER at Western Crossing (3)	MAR-JUL	7.4	11.0	17.3	42	29	38	41
	MAR-SEP	7.3	11.6	18.5	43	30	41	43
MILK RIVER @ Milk River, AB (2,3)	MAR-JUL	10.9	18.9	29	48	47	55	61
	MAR-SEP	11.2	21	31	47	49	61	66
MILK RIVER at East Cross. (2,3)	MAR-JUL	14.5	21	36	49	58	77	73
	MAR-SEP	15.2	22	38	50	62	85	76
BEAVER CREEK near Havre	MAR-JUL	0.00	2.53	4.25	44	8.16	13.92	9.60

ST. MARY and MILK RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
LAKE SHERBURNE	64.3	11.9	9.3	21.1
FRESNO	127.0	9.3	20.5	51.8
BEAVER CREEK	3.5	0.6	2.1	2.1
NELSON	66.8	13.1	13.0	35.7

ST. MARY and MILK RIVER BASINS
Watershed Snowpack Analysis - January 1, 2002

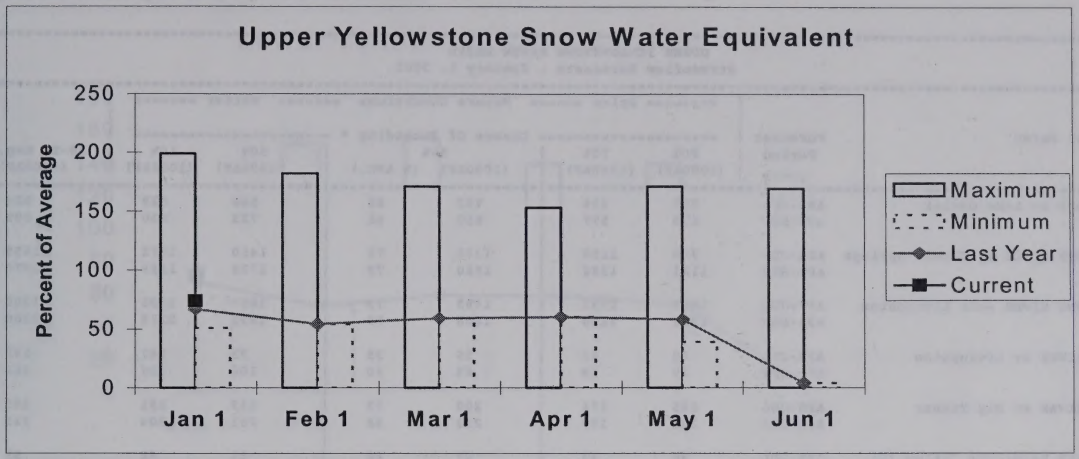
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
ST. MARY	2	162	82
BEARPAW MOUNTAINS	4	6	6
CYPRESS HILLS, CANADA	0	0	0
MILK RIVER BASIN	4	6	6
ST. MARY & MILK BASINS	6	102	66

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

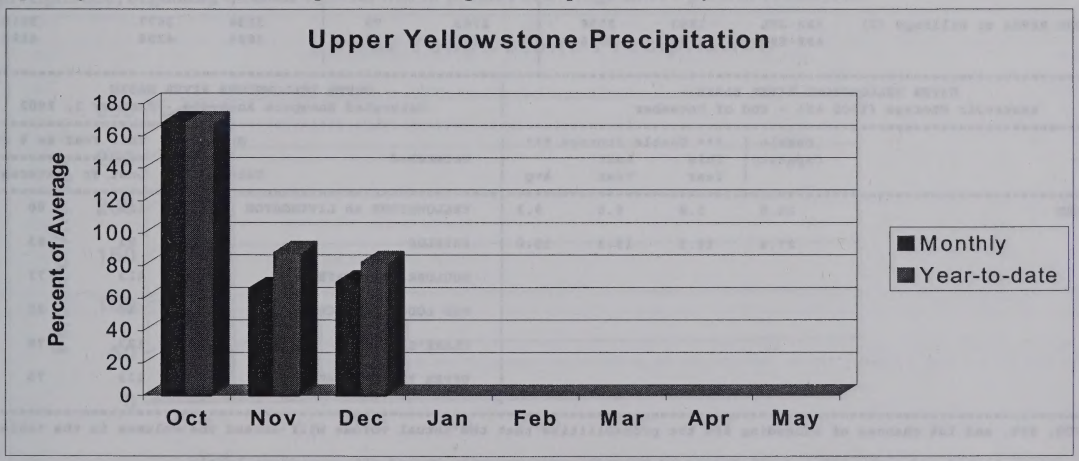
Upper Yellowstone River Basin

Snowpack conditions in the Upper Yellowstone River Basin were below average. Snow water content was 74 percent of average and 113 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1988; February maximum swe was in 1997 and minimum swe was in 2001; March maximum swe was in 1997 and minimum swe was in 2001; April maximum swe was in 1997 and minimum swe was in 2001; May maximum swe was in 1997 and minimum swe was in 1987; and June maximum swe was 1996 and minimum swe was in 2001. Average is for the period 1971 through 2000.

Mountain precipitation during December was 74 percent of average and 89 percent of last year. Valley precipitation during December was 39 percent of average and 64 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 82 percent of average and 109 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 60 percent to 71 percent.

Mystic Lake storage was 62 percent of average and 97 percent of last year and Cooney storage was 107 percent of average and 83 percent of last year.

UPPER YELLOWSTONE RIVER BASIN
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
YELLOWSTONE at Lake Outlet	APR-JUL	351	434	490	83	546	629	590
	APR-SEP	470	577	650	81	723	830	805
YELLOWSTONE RIVER at Corwin Springs	APR-JUL	928	1150	1300	79	1450	1672	1650
	APR-SEP	1121	1382	1560	79	1738	1999	1970
YELLOWSTONE RIVER near Livingston	APR-JUL	1095	1333	1495	79	1657	1895	1900
	APR-SEP	1326	1608	1800	79	1992	2274	2280
SHIELDS RIVER nr Livingston	APR-JUL	20	42	56	39	93	147	145
	APR-SEP	25	49	65	40	106	166	162
BOULDER RIVER at Big Timber	APR-JUL	125	174	208	73	242	291	285
	APR-SEP	126	179	215	68	251	304	315
MYSTIC LAKE Reservoir Inflow (2)	APR-JUL	36	43	47	80	51	58	59
	APR-SEP	47	54	59	78	64	72	76
STILLWATER RIVER nr Absarokee (2)	APR-JUL	204	270	315	64	360	426	495
	APR-SEP	242	315	365	62	415	488	585
CLARKS FORK RIVER nr Belfry	APR-JUL	263	327	370	69	413	477	540
	APR-SEP	291	359	405	68	451	519	595
COONEY RESERVOIR Inflow (2)	APR-JUL	1.1	17.7	29	62	40	57	47
	APR-SEP	6.1	23	35	61	47	64	57
YELLOWSTONE RIVER at Billings (2)	APR-JUL	1853	2396	2765	79	3134	3677	3510
	APR-SEP	2274	2876	3285	80	3694	4296	4120

UPPER YELLOWSTONE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MYSTIC LAKE	21.0	5.8	6.0	9.3
COONEY	27.4	16.1	19.3	15.0

UPPER YELLOWSTONE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

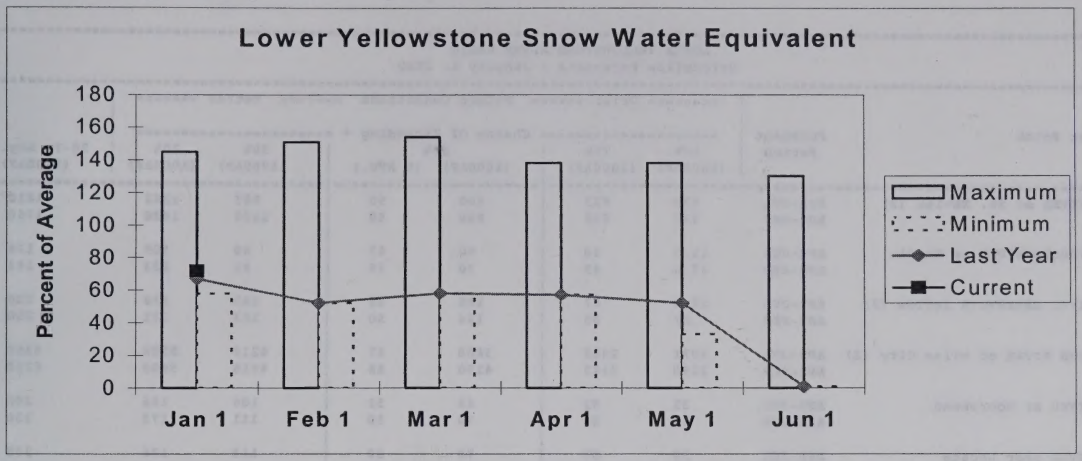
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
YELLOWSTONE ab LIVINGSTON	14	121	80
SHIELDS	3	83	63
BOULDER-STILLWATER	3	113	77
RED LODGE-ROCK CREEK	1	44	25
CLARK'S FORK	7	127	78
UPPER YELLOWSTONE BASIN	24	113	75

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

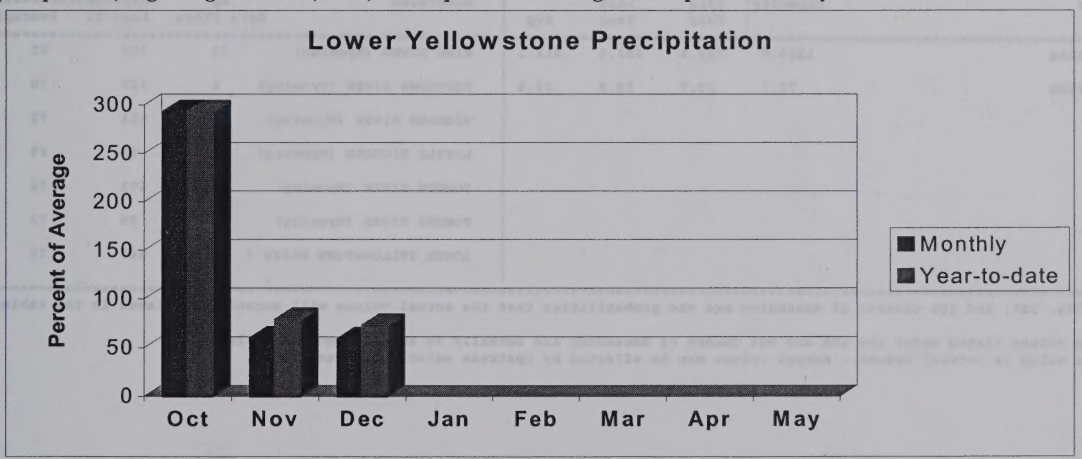
Lower Yellowstone River Basin

Snowpack conditions in the Lower Yellowstone River Basin (Wyoming), were below average. Snow water content was 72 percent of average and 107 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 2000; February maximum swe was in 1997 and minimum swe was in 2001; March maximum swe was in 1986 and minimum swe was in 2001; April maximum swe was in 1986 and minimum swe was in 2001; May maximum swe was in 1997 and minimum swe was in 1981; and June maximum swe was in 1995 and minimum swe was in 2001. Average is for the period 1971 through 2000.

Mountain precipitation (Wyoming) during December was 65 percent of average and 82 percent of last year. Valley precipitation during December was 56 percent of average and 72 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2001, was 73 percent of average and 87 percent of last year.



Assuming near average precipitation, January through July, the spring and early summer streamflow forecasts average 37 percent to 49 percent.

Bighorn Lake storage was 83 percent of average and 85 percent of last year and Tongue River storage was 92 percent of average and 59 percent of last year.

LOWER YELLOWSTONE RIVER BASIN
Streamflow Forecasts - January 1, 2002

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIGHORN RIVER nr St. Xavier (2)	APR-JUL	338	613	800	50	987	1262	1610
	APR-SEP	332	658	880	50	1102	1428	1760
LITTLE BIGHORN RIVER nr Hardin	APR-JUL	11.0	40	60	47	80	109	128
	APR-SEP	17.0	49	70	49	91	123	144
TONGUE RIVER RESERVOIR Inflow (2)	APR-JUL	12.0	67	105	48	143	198	220
	APR-SEP	27	85	124	50	163	221	250
YELLOWSTONE RIVER at Miles City (2)	APR-JUL	2071	2982	3600	67	4218	5129	5360
	APR-SEP	2390	3462	4190	68	4918	5990	6210
POWDER RIVER at Moorehead	APR-JUL	33	52	65	32	106	166	205
	APR-SEP	39	58	70	30	111	173	230
POWDER RIVER near Locate	APR-JUL	38	57	70	30	113	176	235
	APR-SEP	41	62	77	30	126	199	260
YELLOWSTONE RIVER nr Sidney (2)	APR-JUL	2125	3167	3875	71	4583	5625	5480
	APR-SEP	2263	3508	4353	69	5198	6443	6280

LOWER YELLOWSTONE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BIGHORN LAKE	1356.0	753.1	881.0	911.1
TONGUE RIVER	79.1	20.7	34.9	22.5

LOWER YELLOWSTONE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2002

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WIND RIVER (Wyoming)	12	109	72
SHOSHONE RIVER (Wyoming)	6	122	70
BIGHORN RIVER (Wyoming)	16	113	72
LITTLE BIGHORN (Wyoming)	2	91	68
TONGUE RIVER (Wyoming)	6	101	76
POWDER RIVER (Wyoming)	6	95	73
LOWER YELLOWSTONE BASIN (	30	107	72

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Federal Building, Room 443
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Bozeman, MT 59715

Montana
Basin Outlook Report

Natural Resources Conservation Service
Bozeman, MT